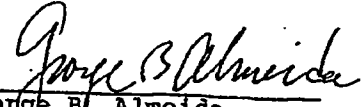


leave for such interview by telephoning the undersigned  
collect at (415) 367-3331.

If the Examiner persists in his final rejection of  
the subject application, applicant respectfully requests  
entry of the amendments for purposes of appeal.

Respectfully submitted,

AMPEX CORPORATION

By   
George B. Almeida  
Agent of Applicant  
Registration No. 20,696

Dated: October 5, 1988  
401 Broadway, M.S. 3-35  
Redwood City, CA 94603-3199



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Daniel A. Beaulier

Serial No.: 018,786

Group No.: 262

Filed: February 24, 1987

Examiner: D. Harvey

For: ELECTRONIC STILL STORE WITH HIGH SPEED SORTING  
AND METHOD OF OPERATION

Commissioner of Patents and Trademarks

Washington, D.C. 20231

RECEIVED

OCT 24 1988

GROUP 260

AMENDMENT TRANSMITTAL

1. Transmitted herewith is an amendment for this application.

STATUS

2. Applicant is

- ☐ a small entity — verified statement:
- ☐ attached.
- ☐ already filed.
- ☒ other than a small entity.

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United State Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Date: 10/5/88

George B. Almeida

(Type or print name of person mailing paper)

*George B. Almeida*

(Signature of person mailing paper)

(Amendment Transmittal [9-19]—page 1 of 4)

**EXTENSION OF TERM**

**NOTE:** "Extension of Time in Patent Cases (Supplement Amendments) — If a timely and complete response has been filed after a Non-Final Office Action, an extension of time is not required to permit filing and/or entry of an additional amendment after expiration of the shortened statutory period.

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of December 10, 1985 (1061 O.G. 34-35).

**NOTE:** See 37 CFR 1.645 for extensions of time in interference proceedings and 37 CFR 1.550(c) for extensions of time in reexamination proceedings.

3. The proceedings herein are for a patent application and the provisions of 37 CFR 1.136 apply

(complete (a) or (b) as applicable)

(a) ☐ Applicant petitions for an extension of time for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
<input type="checkbox"/> one month	\$56.00	\$28.00
<input type="checkbox"/> two months	\$170.00	\$85.00
<input type="checkbox"/> three months	\$390.00	\$195.00
<input type="checkbox"/> four months	\$610.00	\$305.00
		Fee \$ _____

If an additional extension of time is required please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for \_\_\_\_\_ months has already been secured and the fee paid therefor of \$ \_\_\_\_\_ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ \_\_\_\_\_

OR

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

(Amendment Transmittal [9-19]—page 2 of 4)

**FEE FOR CLAIMS**

4. The fee for claims has been calculated as shown below:

(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY	OTHER THAN A SMALL ENTITY
CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE
TOTAL * 15	MINUS ** 19	= 0	x6= \$	x12= \$ 0
INDEP. * 10	MINUS *** 9	= 1	x17= \$	x34= \$ 34
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM			+55= \$	+110= \$ 0
			TOTAL \$	OR TOTAL \$ 34
			ADDIT. FEE \$	

- \* If the entry in Col. 1 is less than entry in Col. 2, write "0" in Col. 3.  
 \*\* If the "Highest No. Previously Paid for" IN THIS SPACE is less than 20, enter "20".  
 \*\*\* If the "Highest No. Previously Paid For" IN THIS SPACE is less than 3, enter "3".  
 The "Highest No. Previously Paid For" (Total or Indep.) is the highest number found in the appropriate box in Col. 1 of a prior amendment or the number of claims originally filed.

(complete (c) or (d) as applicable)

- (c) ☐ No additional fee for claims is required

OR

- (d) ☒ Total additional fee for claims required \$ 34.00

**FEE PAYMENT**

5. ☐ Attached is a check in the sum of \$ \_\_\_\_\_  
☐ Charge Account No. 01-1771 the sum of \$ 34.00

A duplicate of this transmittal is attached.

**FEE DEFICIENCY**

**NOTE:** If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, 1065 O.G. 31-33.

6. ☒ If any additional extension and/or fee is required charge Account No. 01-1771

(Amendment Transmittal [9-19]—page 3 of 4)

AND/OR

☒ If any additional fee for claims is required, charge Account No.  
01-1771

Reg. No.: 20,696

Tel. No.: (415) 367-3331

George B. Almeida 10/5/88

SIGNATURE OF ATTORNEY

George B. Almeida

Type or print name of attorney

401 Broadway

P.O. Address

Redwood City, CA 94063

(Amendment Transmittal [9-19]—page 4 of 4)

AX061752

B-287



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
07/018,766	02/24/87	BERULIEN	D AU-80331

RICHARD P. LANGE  
ANPEX CORP.,  
501 BROADWAY, HS 3-35  
RENOVATION CITY, CA 94063

EXAMINER	
HARVEY, D	
ART UNIT	PAPER NUMBER
282	32/K

DATE MAILED:

11/07/88

## NOTICE OF ALLOWABILITY

## PART I.

1. ☒ This communication is responsive to the Amendment filed 10/7/88
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application, if not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are 2-4, 6, 7, 15, 18, 19, 22, 23, and 27-31
4. ☐ The drawings filed on \_\_\_\_\_ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_.
6. ☒ Note the attached Examiner's Amendment.
7. ☒ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

## PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
  - a. ☐ Drawing Informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. \_\_\_\_\_ CORRECTION IS REQUIRED.
  - b. ☒ The proposed drawing correction filed on 11/20/88 has been approved by the examiner. CORRECTION IS REQUIRED.
  - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
  - d. ☐ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

## Attachments:

- ☒ Examiner's Amendment
- ☒ Examiner Interview Summary Record, PTOL-413
- ☐ Reasons for Allowance
- ☐ Notice of References Cited, PTO-892
- ☐ Information Disclosure Citation, PTO-1449

- ☐ Notice of Informal Application, PTO-152
- ☐ Notice re Patent Drawings, PTO-948
- ☐ Listing of Bonded Draftsmen
- ☐ Other

Serial No. 018,786

-2-

Art Unit 262

1. An extension of time under 37 CFR 1.136(a) is required in order to make an Examiner's Amendment which places this application in condition for allowance. During a telephone conversation conducted on 10/27/88, Mr. George B. Almeida requested an extension of time for one month(s) and authorized the Commissioner to charge Deposit Account No. 01-1771 the required fee of \$56.00 for this extension and authorized the following Examiner's Amendment. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the Issue Fee.

1) In claim 18, line 6, "individually" has been deleted.

2) In claim 18, line 23, "said full size image" has been deleted.

3) In claim 19, line 18, "--directly--" has been inserted after "for".

4) In claim 23, line <sup>13</sup> "having a capacity for" has been deleted.

5) In claim claim 23, line 13, "a" has been changed to --the--.

6) In claim 23, line 15, --the-- has been inserted before "video".

7) In claim 23, line 16, "a" has been changed to --the--.

8) In claim 23, line 18, "both" has been deleted.

AX061755

Serial No. 018,786

-3-

Art Unit 262

9) In claim 23, line 19, "from" has been changed to --stored in--.

10) In claim 23, line 21, "having a capacity for" has been changed to --further--.

11) In claim 23, line 22, --additional-- has been inserted before "video".

12) In claim 23, line 23, "the" has been changed to --additional--.

13) In claim 23, line 24, "of each video image" has been deleted.

14) In claim 23, line 27, the second occurrence of "said" has been deleted.

15) In claim 23, line 29, "said" has been deleted.

16) In claim 23, line 30, "the" has been changed to --a--.

17) In claim 23, lines 30 and 31, "of each video image" has been deleted.

18) In claim 29, line 6, the first occurrence of "a" has been deleted.

19) In claim 29, line 6, "set" has been changed to --sets--.

20) In claim 29, line 10, "set" has been changed to --sets--.

21) In claim 29, line 13, "one of the" has been changed to --from the storage locations a--.

22) In claim 29, line 14, "sets" has been changed to --set representing one--.

23) In claim 29, line 14, "or the set" has been

AX061756



Serial No. 018,786

-4-

Art Unit 262

changed to --and a data set representing one--.

24) In claim 30, lines 19 and 20, "reducing said image to" has been changed to --producing reduced size pixel data representing--.

25) In claim 30, line 28, "same" has been changed to --said reduced image--.

26) In claim 31, line 8, the first occurrence of "a" has been deleted.

27) In claim 31, line 8, "set" has been changed to --sets--.

28) In claim 31, line 12, "set" has been changed to --sets--.

29) In claim 31, line 15, "one of the data sets of" has been changed to --from the storage locations a data set of one of--.

30) In claim 31, line 16, "or the set" has been changed to --and one of the sets--.

31) In claim 31, line 20, "the" has been changed to --a--.

32) In claim 20, lines 20 and 21, "reproductions of each video image" has been changed to --reproduction images--.

33) In claim 31, line 21, --retrieved-- has been inserted after "the".

34) In claim 31, line 21, "reproductions" has been changed to --images--.

35) In claim 31, line 23, "reproductions" has been changed to --retrieved images--.

2. Any inquiry concerning this communication or

Serial No. 018,786

-5-

Art Unit 262

earlier communications from the examiner should be directed to David E. Harvey whose telephone number is (703) 557-6268.

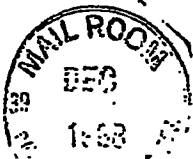
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 557-3321.

D. HARVEY:mg *DA*

(703) 557-6268

11-01-88

*ML*  
EDWARD L. COLES, SR.  
PRIMARY EXAMINER  
ART UNIT 262



#33

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Daniel A. Beaulier

Serial No.: 018,786

Filed: February 24, 1987

Group No.: 262

Examiner: D. Harvey  
(complete if applicable)

Date of mailing of "Notice of Allowance and

Base Issue Fee Due" 11/08/88

Issue Batch No. N77

For: Electronic Still Store  
With High Speed Sorting  
And Method of Operation

Commissioner of Patents and Trademarks  
Washington, D. C. 20231

TRANSMITTAL OF FORMAL DRAWINGS

Attached please find the formal drawings for this application.

Reg. No. 20,696

Tel. No. (415) 367-3331

*George B Almeida*  
SIGNATURE OF ATTORNEY

George B. Almeida

Type or print name of attorney

401 Broadway, N.S. 3-35

P.O. Address  
Redwood City, CA 94063

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner of Patents and Trademarks, Washington, D.C. 20231

Date: Dec 21, 1988

George B. Almeida

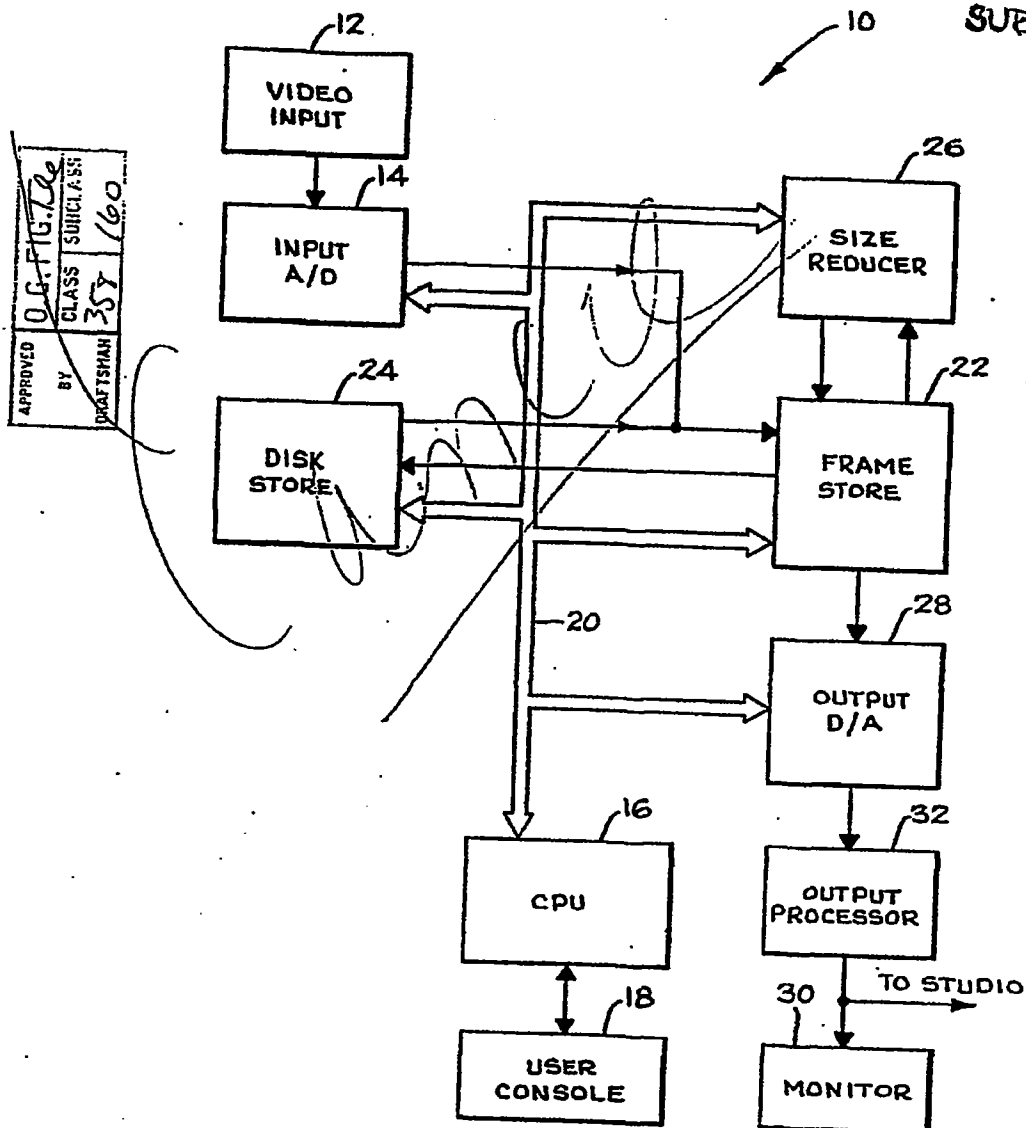
(Type or print name of person mailing paper)

*George B Almeida*  
(Signature of person mailing paper)

(Transmittal of Formal Drawings [5-2])

AV-3033  
1 of 1  
ART Unit  
262  
1-1

~~#83327~~  
018,786  
Class-358  
SUB-160







PATE~~NT~~  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re application of:

Daniel A. Beaulier

Serial No.: 018,786

Filed: February 24, 1987

For: ELECTRONIC STILL STORE  
WITH HIGH SPEED SORTING  
AND METHOD OF OPERATION

Group Art Unit : 262  
Examiner : D. Harvey  
Attorney Docket No.: AV-3033 N2

I hereby certify that this correspondence is being  
deposited with the United States Postal Service as  
first class mail in an envelope addressed to:  
Commissioner of Patents and Trademarks, Washing-

ton, D.C. 20231. or April 27, 1988 *pa*

George B. Almeida 4/27/88  
George B. Almeida, Reg. # 20,696 DATE

RECEIVED

MAY 11 1988

GROUP 260

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Transmitted herewith is an amendment in the above-identified  
application.

- ( ) No additional fee is enclosed because this application was filed  
prior to October 25, 1965 (effective date of Public Law 89-93).  
(X) No additional fee is required.  
( ) The fee has been calculated as shown below.

Claims as amended:

	Claims remaining after amendment	Highest number previously paid for	Present extra	Rate	Addi- tional fee
Total Claims	-	-	-	x12	-
Independent Claims	-	-	-	x34	-
Total additional fee for this amendment					

- ( ) Charge \$ \_\_\_\_\_ to Deposit Account No. 01-1771. A duplicate  
copy of this sheet is enclosed.  
(xx) The Commissioner is hereby authorized to charge any fees  
under 37 C.F.R. 1.16 and 1.17 which may be required by this  
paper, or credit any overpayment, to Deposit Account No.  
01-1771. A duplicate copy of this sheet is enclosed.

Respectfully submitted,  
Daniel A. Beaulier  
AMPEX CORPORATION

By George B. Almeida  
George B. Almeida  
Registration No. 20,696

Dated: April 27, 1988  
401 Broadway, M.S. 3-35  
Redwood City, California 94063  
(415) 367-

(REV. 10/7/85)

RESPONSE UNDER 37 CFR 1.416  
EXPEDITED PROCEDURE  
EXAMINING GROUP 262  
Atty Dkt AMP0035PCON  
AV-3033N1  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

~~DANIEL BOULIER~~  
DANIEL BOULIER

Serial No.: 740,297

Filed: 31 May 1985

For: ELECTRONIC STILL STORE  
WITH HIGH SPEED SORTING  
AND METHOD OF OPERATION

Group Art Unit: 262

Examiner: D. Harvey

CERTIFICATE OF MAILING BY "EXPRESS MAIL"

"Express Mail" Mailing Label No. 576687191

Date of Deposit

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

RESPONSE UNDER 37 CFR

EXPEDITED PROCEDURE

EXAMINING GROUP 262

Kathy E. McKenna  
(Typed or Printed Name of Person Mailing Paper or Fee)

Box AF

The Honorable Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Kathy E. McKenna  
(Signature of Person Mailing Paper or Fee)

Sir:

In response to the Office Action mailed 3 September 1985, please enter the following amendment.

In the Specification

At page 1, line 11 after "may" and before "be", delete "than" and substitute --then--.

At page 2, line 25, delete "positioned reduce" and substitute --positioned, reduced--.

At page 5, line 1, delete "referred" and substitute --preferred--. At line 27, delete "fourth" and substitute --forth--.

At page 6, line 4, insert after "22" and before "is" --, which in the preferred embodiment is a random access memory.--. At line 8, after "24" and before "." insert --in the preferred embodiment but which can be any bulk storage memory device in other embodiments--.

-2-

At page 7, line 9, delete "resolutioncopy" and substitute --resolution copy--. At line 16, delete "usedin" and substitute --used in--. At line 19, delete "continous" and substitute --continuous--.

At page 8, line 7, delete "take" and substitute --taken--. At line 6, after "array" and before "within" insert --as a mosaic which fits--.

#### In the Drawings

Please approve the drawing change marked in green on the enclosed sketch.

#### In the Claims:

2. (Twice Amended) An electronic still store system comprising:

an image store means for [retrievable] retrievably storing therein a plurality of image frame copies of video frames [of video images], the image frame copies comprising data representing a full spatial resolution image [frame copy] and [a] corresponding data representing a reduced spatial resolution image [frame copy] of each frame of video [images] data;

a frame store means which is operable in a first mode [to receive and store] for receiving and storing one of said full spatial resolution images [frame copies] from [the] said image store means and for repetitively [generate] generating a full spatial resolution [output] image [frame] output and operable in a second mode [to receive] for receiving from the image store means and [store] storing a plurality of said reduced spatial resolution images [image frame copies] each at selectively located different positions, the frame store means being further operable in the second mode [to] for repetitively generating [generate a reduced spatial resolution] output



-3-

image [frame having an image frame] comprising [a] the stored plurality of said reduced spatial resolution images [image frame copies selectively located at different positions within the output image frame]; and

a size reducer means [coupled to receive] for receiving from the frame store [a] the stored full spatial resolution image [frame copy] and in response thereto [to return] returning to the frame store means a corresponding reduced spatial resolution image [frame copy] and wherein the frame store is operable [to receive and store] for receiving and storing the corresponding reduced spatial resolution image [frame copy] while continuing to store the stored full spatial resolution image [frame copy].

3. (Twice Amended) The electronic still store system according to claim 2 [above], wherein the corresponding reduced spatial resolution image [frame copies] each have a spatial resolution of [one-fourth] one-fourth the spatial resolution of the corresponding full spatial resolution image [frame copies in each dimension].

4. (Twice Amended) The electronic still store system according to claim 2 [above], [further comprising] wherein said frame store means includes a central processing unit, controlled by an operator, coupled and operable in said first mode to select which of said [image frame copies] full spatial resolution images stored in said image store means are to be retrieved from the image store means and coupled and operable in said second mode to select which of said reduced spatial resolution images stored in said image store means are to be retrieved and stored in said frame store means and to select the [location] different positions within the frame store means at which each of

-4-

said retrieved [image frame copies] reduced spatial resolution images is stored.

Please cancel claim 5.

6. (Twice Amended) The electronic still store system according to claim [5 above] 4, wherein said frame store means further [comprising] comprises an output digital-to-analog converter coupled to receive [said] output image data [frames] from the [the] frame store means and in response thereto to generate an analog video signal representing the received output image [frames]; and

a monitor coupled to receive the analog video signal and display the output image [frames] represented thereby.

7. (Twice Amended) The electronic still store system according to claim 6 [above], further comprising a video input means for generating an input analog video signal representing [a sequence of] an input video image [frames] and an analog-to-digital converter coupled between the video input means and the frame[s] store means [and] for converting the input analog video signal to a digital form [in which] such that digital data representing said input video image frame [can be] is received and stored by the frame store means.

Please cancel claims 8 through 14.

15. (Amended) A video still store system comprising: a size reducer coupled to receive a full size image data set representing a full size image frame and to produce a reduced size image data set representing a corresponding reduced size image frame in response thereto;

-5-

an image store for storing a plurality of said full size image data sets representing a plurality of full size image frames and for storing a plurality of corresponding reduced size image data sets representing a plurality of reduced size image frames, each of said reduced size image data sets corresponding to one of said full size image data sets; and

a frame store means coupled to selectively receive from either an external source or said image store and store one of said full size image data sets, said frame store [is] being operable such that when a full size image data set is received from an external source or is received from said image store and said image store does not contain a corresponding reduced size image data set, said frame store outputs a copy of said full size image data set to said size reducer and [in response thereto] receives a corresponding reduced size image data set which is outputted to said image store for storage with the corresponding full size image data set.

Please add new claims 16-28.

16. An apparatus for storing video images as pixel data comprising:

means for receiving and storing in a first memory pixel data representing video images having a first resolution, and for generating from said pixel data representing said video image at said first resolution pixel data representing a corresponding image having a second, lower resolution and for storing said second resolution image data with said first resolution image data in a second memory; and

means for selectively accessing either said data for the image at its first resolution or only the

-6-

corresponding image data at said second resolution for any image stored in said bulk storage memory for further processing.

17. The apparatus of claim 16 wherein said means for selectively accessing allows access to a plurality of images at said second resolution and storage of them in selected blocks of memory in said first memory so that they may be further processed as a mosaic of reduced size images.

18. An apparatus for storing video pixel data representing video images of a first resolution and, for each image at a first resolution a corresponding video image at a second resolution comprising:

random access memory means for storing video pixel data representing a full size image at said first resolution and a corresponding reduced size version thereof at a second resolution;

means for storing one at a time in said random access memory means a plurality of said full size images;

memory means for receiving video pixel data from said random access memory means and for storing said full size images and the corresponding reduced size images received from said random access memory means and for outputting, upon a user's command, a selected full size image or only the corresponding reduced size image for the selected full size image for storage in said random access memory means;

means for generating said corresponding reduced size image from any said full size image in said random access memory means to be transferred to said memory means and for storing the video pixel data representing said reduced size image in said random access memory means prior to

-7-

storage of the contents of said random access memory means in said memory means.

19. An apparatus for storing video data as full size image and reduced size image of pixel data comprising:

random access memory means for storing video pixel data presented at an input port and having at least one output port;

means for storing video pixel data representing a full size video image at a first resolution in a first group of memory locations in said random access memory means;

bulk storage memory for storing video pixel data and for presenting selected blocks of video data at said input port for storage by said random access memory;

size reducing means coupled to said random access memory means for accessing said image video pixel data stored in said random access memory representing said full size image at said first resolution, and for reducing said image to a reduced size counterpart image at a second, lower resolution and for storing said reduced size image at said second resolution in said random access memory in a second group of storage locations therein; and

control means coupled to said random access memory means, said bulk storage means and to said size reducing means for causing said size reducing means to generate said reduced size image at said second resolution and to store same in said random access memory means in said second group of storage locations each time the video pixel data from said random access memory means is to be transferred to said bulk storage means for storage, and for causing the video pixel data from both said first and second plurality of memory locations in said random access memory means to be transferred to said bulk storage means for storage after said reduced size image is generated and

-8-

stored in said second group of storage locations, and for causing selective transfer of video pixel data from said bulk storage means into said random access memory means for storage such that either said first resolution image or only the reduced size second resolution counterpart are transferred into said random access memory means.

20. The apparatus of claim 19 wherein said control means also is coupled for causing selective transfer of said second resolution image directly from said size reducing means into said bulk storage means.

21. The apparatus of claim 19 wherein said control means also is coupled for controlling the memory locations in said random access memory means where the video pixel data defining said second resolution image are stored upon transfer from said bulk storage means.

22. The apparatus of claim 21 wherein said size reducing means produces said second resolution image with 1/16th the resolution of said first resolution image and wherein said control means is coupled for causing transfer of said second resolution image into said random access memory for storage at a selected one of 16 predetermined blocks of memory locations.

23. A system for storing and retrieving video data representing video images which are displayed as rasters of vertically distributed horizontal lines, each represented video image normally occupying a raster of selected vertical and horizontal size, the system comprising:

a video image size reducer having an input coupled to receive video data representing a video image

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corresponding to a selected raster size and generate therefrom at an output video data representing a reproduction of said video image corresponding to a selected fractional-size of said selected raster size;

a first store having an input for receiving video data for storage and an output for providing video data retrieved from storage, said first store having a capacity for storing video data representing a video image corresponding to of the selected raster size together with video data representing a reproduction of a video image corresponding to the selected fractional-size of said selected raster size;

a second store having an input for receiving video data for storage and an output for providing video data retrieved from storage, said second store having a capacity for storing video data representing a plurality of video images each corresponding to a video frame of the selected raster size and video data representing the reproduction of each video image of selected fractional size of said selected raster size; and

means for selectively transferring from said first store to said second store either said video data representing a video image corresponding to the selected raster size or said video data representing a reproduction of a video image which is the selected fractional size of said selected raster size.

24. A method of storing video pixel data comprising: receiving data for a full size image at a first resolution and generating therefrom data representing a reduced size reproduction image at a second, lower resolution;

storing both the full size and the reduced size image in a bulk storage medium; and

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selectively accessing either the full size or said reduced size image from said bulk storage medium.

25. The method of claim 24 further comprising the steps of storing a plurality of full size images and their reduced size reproduction images and accessing a plurality of selected reduced size images and storing them in selected blocks of storage locations in a random access memory.

26. The method of claim 24 wherein each full size image occupies upon display a raster of selected vertical and horizontal size, and further comprising the steps of storing a plurality of full size images and their reduced size reproduction images and accessing a plurality of selected reduced size images and storing them in a random access memory and outputting the group of stored reduced size reproduction images as a mosaic of reproduction images occupying a raster of the selected vertical and horizontal size.

27. A method of storing video pixel data comprising:  
receiving and storing in random access memory video pixel data comprising a full size image;

generating therefrom video pixel data representing a reproduction thereof in the form of a reduced size image at a lower resolution from the full size image data and storing the pixel data representing the reduced size image so generated in additional storage locations in said random access memory along with the full size image;

storing both the full size and the reduced size image in bulk storage memory;

selectively transferring either the full size image or the reduced size image from said bulk storage memory means



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into said random access memory means for further processing.

28. A video still store system comprising:

an image store for storing full size image data sets representing a plurality of full size images and for storing a plurality of reduced size image data sets representing a plurality of reduced size images, each of said reduced size image data sets corresponding to one of the full size image data sets;

an external source input for receiving from an external source full size image data sets;

a memory for simultaneous storage of one of said full size image data sets and the corresponding one of said reduced size image data sets;

a size reducer means for receiving from said memory the stored one of said full size image data sets, and for producing and returning to said memory the corresponding reduced size image data set;

said memory being coupled and operative to selectively receive from either the external source input or the image store and to store said one of said full size image data sets, and to output as an output image the stored one of said full size image data sets, and to communicate to the size reducer the stored one of said full size image data sets, and to receive from the size reducer and to store the corresponding reduced size image data set, and to provide to the image store both the stored one of said full size image data sets and the corresponding reduced size image data set, and to receive from the image store and to store at different selected locations selected ones of said plurality of reduced size image data sets, and to output as said output image the stored selected ones such that the selected ones are disposed at different locations

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within the output image or to receive and store from said image store only a full sized image data set; and means to retrieve data from said memory and display it on a raster scanned video display.

#### REMARKS


The undersigned thanks the Examiner for the courtesy of the telephone interview. In response to the discussions therein of new claims written by the undersigned, said new claims are submitted herewith for examination based on the substance of the interview. Further, some of the now pending claims have been retained and amended to eliminate the problems under 35 U.S.C. Section 112 noted in the outstanding office action. New claim 28 is the Examiner's suggested rewrite of claim 9 with some minor changes in terminology and one additional element. We would like to add that this claim is a very good claim. We thank the Examiner for taking the time to write it.

New claims 16 through 28 are in accord with the novelty identified by the Examiner in the first Office Action in the parent of the above identified U.S. patent application. Based upon the content of the Hugh Boyd, Quantel reference, which teaches accessing from disk the entire full size picture before size reduction can occur, these new claims are believed to be allowable. This is so because they teach storing a reduced image with the full size image each time a full sized image is to be stored from the frame buffer to the disk. This allows the user the option of retrieving the entire full size image or only the reduced size counterpart from disk. Mosaics of reduced size counterpart images may be made by accessing several reduced size images and moving them around in the frame buffer. The access time for each reduced size image

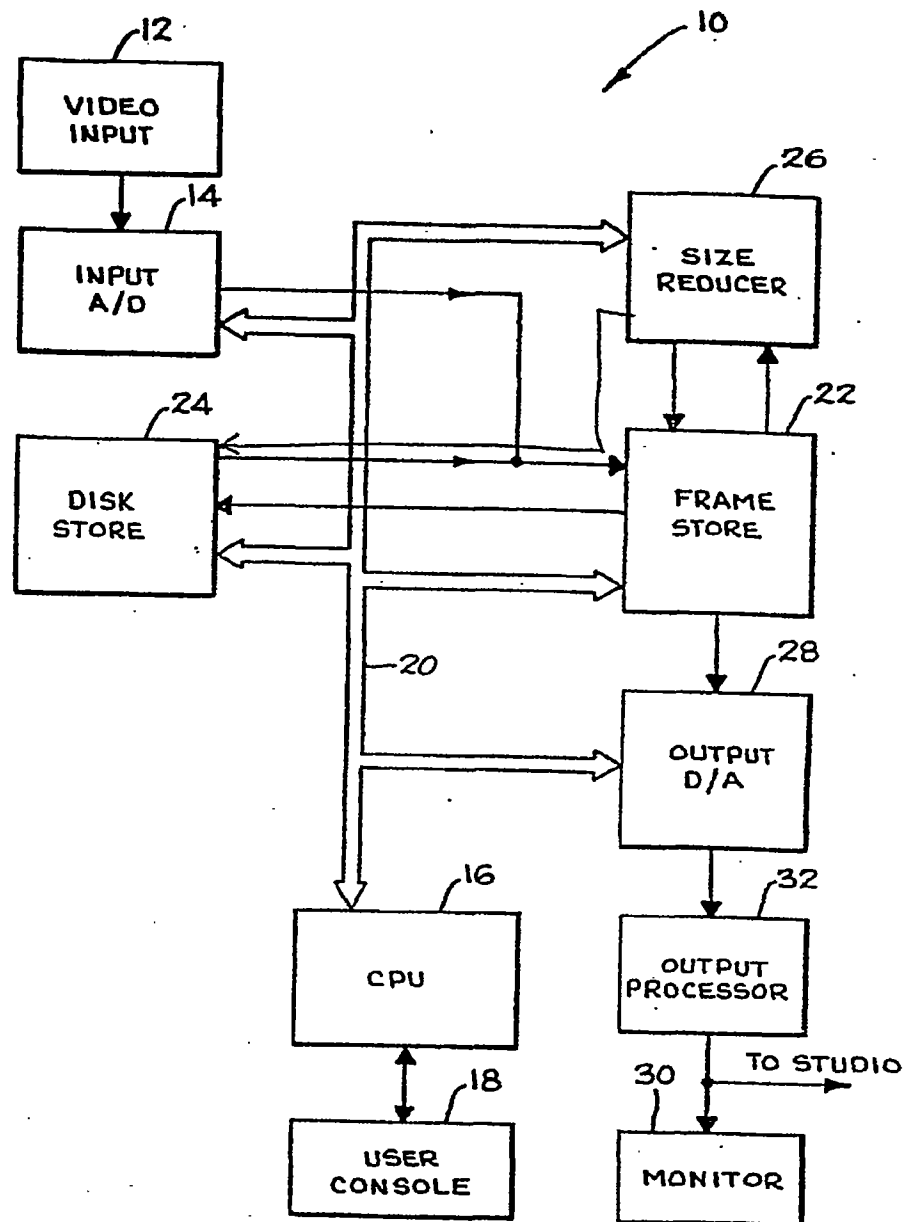
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is only a fraction of the access time for the entire full size image. This system obviously has a major advantage over the Boyd, Quantel system in that access time for a frame comprised of one or more reduced images will be substantially shorter than the Boyd, Quantel system can provide. This is because the Boyd, Quantel reference does not store a reduced image automatically with the full size counterpart each time a full size image in the frame buffer is to be stored on disk. Thus to access any particular reduced image, the entire full size image must be accessed and loaded into the size reducer. Clearly this takes more time than accessing only the data describing the reduced size image from the disk.

Respectfully submitted,  
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20 November 1986  
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Attorney's  
Docket No. AMP0035PCON

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

DANIEL A. BEAULIER

Serial No.: 740,297

Filed: 31 May 1985

For: ELECTRONIC STILL STORE WITH HIGH  
SPEED SORTING AND METHOD OF  
OPERATION

Group Art Unit: 262

Examiner: D. Harvey

PETITION FOR EXTENSION OF TIME

Honorable Commissioner of Patents and Trademarks  
Washington, D. C. 20231

Sir:

The following extension of time is requested to respond to the  
Office Action of 23 May 1986:☐ One month to \_\_\_\_\_. The extension fee is  
☐ \$28.00 ☐ \$56.00.☐ Two months to \_\_\_\_\_. The extension fee is  
☐ \$85.00 ☐ \$170.00.☒ Three months to \_\_\_\_\_. The extension fee is  
☐ \$195.00 ☒ \$390.00.☐ Four months to \_\_\_\_\_. The extension fee is  
☐ \$305.00 ☐ \$610.00.☒ A check in the amount of \$ 594.00 is attached.☐ Charge \$ \_\_\_\_\_ to Deposit Account No. 03-1952.The Commissioner is hereby authorized to charge any fees under 37 C.F.R.  
§§1.16 and 1.17 which may be required by this paper, or to credit any overpayment,  
to Deposit Account No. 03-1952. A duplicate copy of this sheet is enclosed.CIOTTI & MURASHIGE  
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 Ronald Craig Fish  
 Reg. No. 28,843  
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